

Ps patients had dominantly (54%) low disease activity, in RA group mostly (51%) the moderate activity was observed, while the most frequent disease activity category for CD patients was remission (39%). Mean annual cost of overall work impairment (presenteeism and absenteeism cost together) amounted to PLN 29 727 for RA, PLN 24 434 for Ps and PLN 23 682 for CD. Cost of loss of productivity due to RA ranged from PLN 15 069 for patients in remission to PLN 41 296 for highly active disease. For Ps it was respectively PLN 13 846 and PLN 44 009 and for CD PLN 15 543 and PLN 63 771. **CONCLUSIONS:** Productivity loss among workers with CD, Ps and RA generates significant costs for society which rises with disease activity.

#### PMS58

##### LONG-TERM WORK PRODUCTIVITY COSTS AMONG SUBJECTS WITH EARLY RHEUMATOID ARTHRITIS - A NATIONWIDE ANALYSIS BASED ON 7,831 SUBJECTS' SICKNESS ABSENCE DAYS AND INCOME

Martikainen JA<sup>1</sup>, Krol M<sup>2</sup>, Rantalaiho V<sup>3</sup>, Kautiainen H<sup>4</sup>, Puolakka K<sup>5</sup>

<sup>1</sup>University of Eastern Finland, Kuopio, Finland, <sup>2</sup>Erasmus University, Rotterdam, The Netherlands, <sup>3</sup>Tampere University Hospital, Tampere, Finland, <sup>4</sup>Helsinki University Central Hospital, Helsinki, Finland, <sup>5</sup>Lappeenranta Central Hospital, Lappeenranta, Finland

**OBJECTIVES:** To estimate the long-term productivity costs (PC) and their determinants associated with absenteeism and permanent work disability (WD) in Finnish patients with early rheumatoid arthritis (RA) available to workforce at baseline. **METHODS:** A cohort of subjects with early RA was created by identifying the new cases of RA from the national register of the Social Insurance Institution (SII) in Finland, who were granted a special reimbursement of anti-rheumatic medications for rheumatoid factor positive (ICD-10 code: M05) or negative RA (M06) in 2000–2007. The obtained dataset was enriched by cross-linking with the national databases about the subjects' annual incomes, WD days, and permanent disability pensions. The human capital approach was applied to estimate PC based on subjects' the annual number of absenteeism days and incomes. The PC were estimated and expressed as per patient-observation year. Hurdle regression analysis was applied to study the determinants of PC. Sensitivity analyses were conducted to test the robustness of the obtained results. **RESULTS:** The study cohort comprised 7,831 subjects with early RA in paid jobs. The mean age (SD) of subjects was 46 years (11) and 71 % were women. Mean (bootstrapped 95%CI) annual PC per patient-observation year was 4,574€ (95% CI 4,469€ to 4,680€). The PC increased progressively over the years. The use of methotrexate-based combination therapies during the first three months after RA diagnosis reduced significantly the cumulative PC during the follow-up. **CONCLUSIONS:** So far the majority of the productivity cost studies have been based on cross-sectional data. However, the results of the present study provide unique evidence about the longitudinal economic burden of RA over the course of disease. The results highlight the need for treatment strategies with predefined targets and tight control of disease activity in the early course of disease to reduce the long-term burden of RA.

#### PMS59

##### CHARACTERIZING WORK PRODUCTIVITY LOSS IN INCIDENT RHEUMATOID ARTHRITIS IN SWEDEN

Banefelt J<sup>1</sup>, Gustavsson A<sup>1</sup>, Borgström F<sup>1</sup>, Alemao E<sup>2</sup>

<sup>1</sup>Quantify Research, Stockholm, Sweden, <sup>2</sup>Bristol-Myers Squibb, Princeton, NJ, USA

**OBJECTIVES:** To study the trends in work productivity loss pre- and post-diagnosis of incident rheumatoid arthritis (RA) and compare it to patients with osteoarthritis (OA) undergoing knee or hip replacement surgery. **METHODS:** Retrospective register study conducted using Swedish national registers. Patients of working age with an incident diagnosis of RA between 2003 and 2009 were identified in the National Patient Register (n=14900). OA patients undergoing surgery were identified during the same period and considered as a reference group (n=34240). Monthly productivity loss twelve months pre-diagnosis to twelve months post-diagnosis was evaluated in the base case. Productivity loss was defined as the sum of net sick leave days and net disability pension days as recorded in the Social Insurance Register. **RESULTS:** Monthly productivity loss gradually increased during the months leading up to RA diagnosis, peaking the month after diagnosis (mean 14.7 days/month). The same pattern was observed in the OA group in relation to time of surgery, although the increase in productivity loss the months post-surgery was considerably larger than the corresponding increase in the RA patients, peaking the second month following surgery (28.5 days/month). Twelve months post-surgery, the OA patients returned to levels of productivity loss similar to those seen six months pre-surgery (12.3 days/month vs. 12.7 days/month, respectively). This reversal was not mirrored by the RA patients, who stabilized at an elevated level of productivity loss post-compared to pre-diagnosis levels (12.1 days/month vs. 9.6 days/month). **CONCLUSIONS:** This study illustrates the unmet needs in RA. The partial reversal in work ability post-diagnosis, in contrast to the almost complete reversal seen in OA patients post-surgery, highlights the need for improved treatment options in RA; while the gradual loss of work ability leading up to diagnosis highlights the need for intervention earlier in the disease process.

#### PMS60

##### A COMPARISON OF THE IMPACT OF RHEUMATIC DISEASES AND OTHER CHRONIC DISEASES ON EARLY RETIREMENT IN PORTUGAL

Laires PA<sup>1</sup>, Canhão H<sup>2</sup>, Gouveia M<sup>3</sup>

<sup>1</sup>Sociedade Portuguesa de Reumatologia, Lisbon, Portugal, <sup>2</sup>Faculdade de Medicina, Universidade de Lisboa, Lisbon, Portugal, <sup>3</sup>Católica Lisbon School of Business and Economics, Lisbon, Portugal

**OBJECTIVES:** Chronic diseases and in particular rheumatic diseases (RD) may lead to early retirement, generating substantial indirect costs to society. We compare RD to other major chronic diseases regarding their impact on the likelihood of early retirement in the Portuguese population. **METHODS:** The study population consisted of all people between 50 and 64 years of age (3,762 men and 4,241 women) who participated in the Portuguese National Health Survey, conducted in 2005/2006. Self-reported data were collected on health, sociodemographic and occupational factors. The effects of RD and other chronic diseases on the likelihood of early retirement and the population attributable fractions (PAF) estimates were obtained at the

individual level by logistic regression. **RESULTS:** At the time of the survey, 19.5% of the Portuguese population with ages between 50 and 64 years old were officially retired. A larger average number of major chronic diseases per capita was found among those with early retirement when compared to active workers in the same range of age (2.0 vs. 1.4 p<0.001). RD were particularly prevalent among early retirees when compared with employees (43.3% vs. 32.1%, p<0.001). The following OR and PAF (adjusted by age, sex and region and unadjusted) were obtained: RD (OR:1.3-1.4; PAF:7.3-9.7), chronic pain (OR:1.4-1.4; PAF:6.6-7.2), hypertension (OR:1 (NS) -1.3; PAF:1.1-7.1), diabetes (OR:1 (NS) -1.2 (NS); PAF:0-2.4), renal impairment (OR:3.3-3.4; PAF:2.7-3.2), respiratory diseases (OR:1.5-1.7; PAF:1.5-2.1), stroke (OR:3.2-3.6; PAF:2.6-3.2), myocardial infarction (OR:1.2 (NS) -1.9; PAF:0.3-1.1), cancer (OR:2.1-1.9; PAF:2.1-2.1), depression (OR:1.5-1.2 (NS); PAF:4.8-2.8) and anxiety (OR:1.6-1.5; PAF:3.7-3.5) with NS standing for not statically significant. **CONCLUSIONS:** From a public health angle, PAF is a good measure of the importance of a risk factor, taking into account both the strength of the association with the outcome and its prevalence in the population. Among all major chronic diseases, RD had the highest PAF estimates for early retirement in Portugal.

#### PMS61

##### COST OF PHARMACOTHERAPY IN POLISH PATIENTS WITH RHEUMATOID ARTHRITIS

Szafraniec-Burylo S<sup>1</sup>, Orlewska E<sup>2</sup>

<sup>1</sup>National Institute of Public Health - National Institute of Hygiene, Warsaw, Poland, <sup>2</sup>Jan Kochanowski University, Kielce, Poland

**OBJECTIVES:** To assess cost of pharmacotherapy in Polish patients with rheumatoid arthritis (RA) in relation to disease activity (DAS28-CRP) and disability (HAQ-DI). **METHODS:** Data on drug consumption was collected during a prospective one center cohort observational study of non-selected RA patients discharged from tertiary academic hospital. At enrollment patients were divided according to DAS28-CRP and HAQ-DI. Observational period was 6 months. Spearman rang correlation coefficient and test of its significance were used to investigate the relationship of cost of pharmacotherapy with disease activity and disability. Mean total cost of drugs and mean cost of drugs covered by public payer were calculated in PLN at 2014 prices (1 EURO=4.2 PLN in 2014). **RESULTS:** DAS28-CRP was ≤5.1 in 124 patients (group A) and >5.1 in 83 patients (group B). HAQ-DI was >2 in 51 patients (group I), >1 and ≤2 in 88 patients (group II), ≤1 in 66 patients (group III). Mean cost of pharmacotherapy per patient was 1010 PLN in group A and 858 PLN in group B, 1078 PLN in group I, 981 PLN in group II and 745 in group III. The differences between groups were not statistically significant. Public payer covers only 36-40% of the drugs cost. **CONCLUSIONS:** These results represent the current use of drugs in the population of Polish RA patients under real-life conditions and indicate that there is no impact of disease activity and disability on the cost of pharmacotherapy due to RA.

#### PMS62

##### ORGANIZATIONAL AND MANAGEMENT IMPACT ANALYSIS OF USING THE NEW SUBCUTANEOUS FORMULATION OF TOCILIZUMAB IN SELECTED ITALIAN RHEUMATOLOGY CENTERS

Ravera S<sup>1</sup>, Tomic R<sup>1</sup>, Adami S<sup>2</sup>, Viapiana O<sup>2</sup>, Paolini D<sup>1</sup>, Bianchino L<sup>1</sup>, Canciani M<sup>3</sup>,

Farina M<sup>3</sup>, Ciano C<sup>4</sup>, Govoni M<sup>4</sup>

<sup>1</sup>Roche S.p.A., Monza, Italy, <sup>2</sup>University of Verona, Verona, Italy, <sup>3</sup>Emmeffe S.r.l., Milano, Italy,

<sup>4</sup>Ferrara University, Ferrara, Italy

**OBJECTIVES:** In the light of future arrival of subcutaneous (SC) formulation of tocilizumab for the treatment of moderate to severe active rheumatoid arthritis, a multidimensional analysis has been performed in order to evaluate potential impact of introducing SC formulation vs. intra-venous (IV) one from the perspective of both patients and hospitals in Italy. **METHODS:** The analysis was conducted in three Italian Rheumatology centers (AO-S. Anna-Ferrara, AO-Verona, UOS-Valeggio-sul-Mincio) through a questionnaire administered to clinicians and nurses. A 60 minutes day-hospital administration for IV and 20 seconds-1 minute administration for SC self-injector or pre-filled syringe administered at home (excluding the first administration) were assumed. Monitoring visits were considered as 1 per month for IV and 1 every three months for SC. Four impact areas were evaluated: patient's drug-administration time and costs (including transportation time and cost and loss of productivity), drug-administration related hospital-personnel time, drug wastage and patient risk profile evaluated through Failure Models and Effect Analysis. A one year time horizon was considered. **RESULTS:** The analysis showed that the new SC formulation, compared to IV, could have a significant impact in terms of: patient time saving (- 91% of the time for the administration of therapy), patient costs (-86%), clinicians and nurses time saving measured as Full Time Equivalent (- 59% for clinicians and -94 % for nurses), drug wastage (-100%), and patient risk profile (-93%). **CONCLUSIONS:** The subcutaneous formulation of tocilizumab could have several organizational and management impacts. From the hospital perspective it could lead to reduction of medical resources consumption with the possibility to re-allocate them in other medical activities. From the patient perspective the new SC formulation could lead to time savings and costs reduction with a potential improvement of patient quality of life.

##### MUSCULAR-SKELETAL DISORDERS – Patient-Reported Outcomes & Patient Preference Studies

#### PMS63

##### SYSTEMATIC REVIEW AND META-ANALYSIS OF PERSISTENCE WITH DENOSUMAB IN PATIENTS WITH OSTEOPOROSIS

Jonsson E<sup>1</sup>, Cheng L<sup>1</sup>, Ström O<sup>1</sup>, Intorcchia M<sup>3</sup>, Karlsson L<sup>1</sup>

<sup>1</sup>Quantify Research, Stockholm, Sweden, <sup>2</sup>Amgen Inc., Thousand Oaks, CA, USA, <sup>3</sup>Amgen (Europe) GmbH, Zug, Switzerland

**OBJECTIVES:** Conduct a systematic review and meta-analysis of published literature on persistence with denosumab in patients with osteoporosis. **METHODS:**